YaSM® Process Map

User Manual for the YaSM® Process Map (MS Visio™ Version)

YaSM®

Contents

Installation 5

Extracting the ZIP archive 5

Contents of the ZIP archive 5

Setting up the repository add-in 6

Installing the current version of the add-in (Visio 2010 or 2013 on Windows 7, 8 or 10) 7

Installing the “legacy version” 8

First start of Visio after installing the add-in 9

Required system fonts 10

Installation of updates to the add-in 10

Navigating the YaSM® Process Map 11

Components of the YaSM® Process Map 12

Visio diagrams 12

Front page 12

Process overviews 12

Flowchart diagrams 12

Process structure diagram 13

Overview of YaSM data objects (“YaSM objects”) 13

YaSM data object model 13

Object lifecycle diagrams 14

RACI matrix 14

Checklists/ document templates 14

Quick references 15

YaSM process descriptions 15

YaSM glossary 15

Process inputs/ outputs 15

YaSM role descriptions 15

Process metrics 15

Types of Shapes used in the Visio Diagrams 16

Master shapes and the document stencil 16

Processes 17

Tasks/ activities 17

YaSM data objects (“YaSM objects”) 18
“Other data objects” 18
Roles 19
Attachments 20
Start and end events 20
Sequence flows 21
Associations 21
Decision gateways 21
OR (inclusive) gateways 21
AND (parallel) gateways 21
Annotations 21
Navigation shapes 21
Modifying the Process Diagrams 22
Adding new shapes to existing diagrams 22
Changing shape data 22
Modifying links 22
Creating new process diagrams 23
Container shapes 23
Inserting or moving swim lanes 24
Using the Repository Add-In 26
Introduction 26
Add-in commands 27
Refresh 27
Refresh File 27
Select 28
Options 28
Simple changes to the repository 29
Creating custom object types linked to the repository 31
Adding data fields 34
Background information on the repository add-in 35
Using the YaSM® Process Map with SharePoint 37
Modifications to the Visio diagrams 37
Conversion from VSD to VSDX or VDW format 37
Modification of hyperlinks 38

Modifications to the RACI matrix 41

Installation

This document provides instructions for the use of the YaSM®[1] Process Map for Microsoft Visio™[2]; prior knowledge of the Visio application is assumed.

Extracting the ZIP archive

The YaSM® Process Map is delivered as a ZIP archive, containing all product components.

The files can be unzipped into any directory. The file names and the structure of the sub-folders, however, should not be changed unless required, as the links in the process diagrams are based on those names.

If file or folder names are changed, all shapes with hyperlinks pointing to those files or folders must be updated accordingly.

Contents of the ZIP archive

The delivery archive contains the following folders and files:

- Folder *"Diagrams"*: Visio files containing the process diagrams, arranged in a number of sub-folders:
  - *"YaSM_Top_Level"*
  - *"Service_Lifecycle_Processes"*
  - *"Supporting_Processes"*
  - *"YaSM_Object_Lifecycles"*
  - *"Complementary_Diagrams"*
  - *"YaSM_ISO20000_Bridge"* (only available if the product license includes the "YaSM® - ISO 20000 Bridge").
- Folder *"RACI"*: RACI matrix in Excel format.
- Folder *"Checklists"*: Checklists in Microsoft Word™ format, specifying the YaSM objects in detail.

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[1] YaSM® is a registered trade mark of IT Process Maps GbR.

[2] Microsoft™, Visio™, Word™ and Excel® are trademarks of Microsoft Corp.

— Folder *"Accompanying_Documents"*: Introduction to YaSM®, user manual, implementation guide, Excel table of process inputs and outputs, PDF quick references such as the YaSM glossary, and collection of process metrics.
— Folder *"ISO_20000_Documents"*: Original ISO 20000 document and introduction to the YaSM® - ISO 20000 Bridge (only available if the product license includes the "YaSM® - ISO 20000 Bridge").
— Folder *"Stencils"*: Visio stencil, containing the master shapes used in the YaSM® Process Map.
— Folder *"Setup"*: Installation files for setting up the repository feature (a Visio add-in).
— Folder *"Repository"*: Excel repository (used in combination with the repository add-in).

Setting up the repository add-in

The YaSM® Process Map includes an add-in for Visio (the "repository add-in") which makes it possible to read data from an Excel repository and write those data into a shape's shape data fields and link attributes. See page 26 for more details.

The setup folder of your delivery archive contains two sub-folders with the current and "legacy" versions of the add-in:

— The *current* version is to be used with the more recent editions of Visio and Windows (Visio 2010 or 2013 on Windows 7, 8 or 10).
— The *legacy* version is to be used with older editions of Visio and Windows (the minimum requirements are Windows XP and Visio 2003).

Note: The setup files contained in your delivery archive are compatible with the 32-bit editions of Visio, which are typically installed even on computers running 64-bit editions of Windows. Please get in touch with IT Process Maps if you use a 64-bit version of Visio to obtain an additional setup package.

The Visio add-in is not strictly required as the Visio diagrams contain all information, and all hyperlinks work in the product's original state upon delivery. But the add-in is a useful extension of the standard Visio functionality that makes it easier to perform certain kinds of modifications to the Visio diagrams.

Installing the current version of the add-in (Visio 2010 or 2013 on Windows 7, 8 or 10)

Setting up the required version of .NET

The add-in requires Microsoft .NET 4.5 or later, which is present by default on most Windows systems if they are kept up-to-date through Windows Update.

If .NET 4.5 (or later) cannot be found on the system, the setup routine will try to install it. However, we recommend to verify that the latest version of .NET 4.x is installed on the system before setting up the repository add-in. If required, the latest updates to .NET can be obtained through Windows Update.

Installing the latest updates to Windows and Visio

Before installing the repository add-in, please get the latest updates for Windows and Visio through Windows Update. This is especially important if you have just completed a fresh installation of Visio on your PC, as the update will install additional Visio components, depending on your versions of Windows and .NET.

Setting up the repository add-in

To set up the repository add-in, double-click on "*setup.exe"* in the "*Current_Version"* sub-folder and follow the instructions. Running the setup is required for each client PC on which the add-in is to be used.

Please note that the setup installs the add-in for the current user only. Every additional user who intends to work with the add-in on a particular PC is required to run the setup once again while being logged in with his or her own user credentials. A standard (non-administrator) user may start the setup, but Windows may ask for the password of an administrator during setup.

Security policies and publisher verification

Depending on your organization's security policy and settings, the setup may be terminated with a security warning stating that the add-in's certificate or its location is not trusted. This may happen in particular when the setup is started from a network folder.

A possible workaround consists of temporarily copying the setup folder to a local folder (for instance to the Windows desktop) and starting the setup from there.

An alternative solution would be to add the add-in's certificate to each client computer on which it is to be installed. The certificate can be found in the "*setup.exe"* file in the setup folder (right-click on "*setup.exe"*, then choose "*Properties"* from the context menu; in the "*File Properties"* dialog, look for the "*Digital Signatures"* tab, from where the certificate can be viewed and installed - either for the current user or the local machine). When asked to specify a location for the certificate, choose "*Trusted Root Certification Authorities"*.

Installing the "legacy version"

The legacy version of the add-in is compatible with older editions of Visio and Windows (the minimum requirements are Visio 2003 and Windows XP).

Setting up the required version of .NET

The add-in requires Microsoft .NET 2, 3 or 3.5, which is present by default on most Windows systems if they are kept up-to-date through Windows Update.

If .NET 2, 3 or 3.5 cannot be found on the system, the setup routine will try to install it. However, the legacy version of the add-in may not always succeed and we recommend to verify that the required version of .NET is installed on the system before setting up the repository add-in. In the more recent version of Windows, .NET 3.5 can be turned on in the Control Panel under "Programs and features -> Turn Windows features on or off").

Installing the latest updates to Windows and Visio

Before installing the repository add-in, please get the latest updates for Windows and Visio through Windows Update. This is especially important if you have just completed a fresh installation of Visio on your PC, as the update will install additional Visio components, depending on your versions of Windows and .NET.

Setting up the legacy repository add-in

To set up the repository add-in, double-click on "*setup.exe"* in the "*Legacy_Version"* sub-folder and follow the instructions. Running the setup is required for each client PC on which the add-in is to be used.

Please note that the setup is only able to install the add-in for the current user. Every additional user who intends to work with the add-

in on a particular PC is required to run the setup once again while being logged in to Windows with administrator rights.

If company policies demand that “ordinary” users are not normally assigned administrator rights, the workaround is to temporarily assign administrator rights to those users while running the setup.

Additional components required by the add-in

Apart from the actual Visio add-in, the setup routine will also install the two following Microsoft run-time components on which the add-in depends:

— Microsoft Office 2003 (2007, 2010) Primary Interop Assemblies (depending on your installed version(s) of Microsoft Office)

— Microsoft Visual Studio 2005 Tools for Office Second Edition Runtime

The setup routine may try to download the installation package for Microsoft Visual Studio 2005 Tools for Office Second Edition Runtime (“*vstor.exe*”) from the Microsoft web site. If this results in an error message (for example due to restrictive security settings), this component can be downloaded from the Microsoft website and installed manually prior to running the setup for the add-in (URL: “*http://go.microsoft.com/fwlink/?LinkId=100566*”).

First start of Visio after installing the add-in

Upon the first start of Visio after installing the add-in, four new commands will be available in the “*Add-Ins”* tab in the Visio ribbon.

Note: The ribbon was introduced with Visio 2010. A custom toolbar will appear in the older editions of Visio 2003 and 2007.

A message window will inform you that a “*New Config File Visio_ Repository_Add-In.cfg*” has been created.

This configuration file stores the add-in’s configuration data. Under normal circumstances, you will not need to edit this file manually.

Next, a message informs you that no repository file is set at this stage: Before being able to use the repository feature, it is necessary to specify where exactly on your system or local network the Excel repository file is located.

Click on “*OK”* and select your repository file (if you start up the YaSM® Process Map for the first time, you will most likely want to select the original Excel repository, which is located in the “*Repository”* folder of your delivery archive).

Required system fonts

The diagrams of the YaSM® Process Map use the Calibri font which is installed by default on most Windows systems.

If Calibri is not installed on your system, an alternative font like Arial will be used - please install the Calibri font in that case for optimal display and readability of the diagrams.

Installation of updates to the add-in

Before installing an updated version of the Visio add-in, please deinstall the existing installation in the Windows Control Panel.

After that, proceed with setting up the new version of the add-in as described above.

Navigating the YaSM® Process Map

The "*Front Page*" diagram (file "*Frontpage_YaSM_Process _Map.vsd*") is the main entry-point into the YaSM® Process Map. The various components of the process model can be reached from there via shapes configured with hyperlinks. It is of course also possible to open all files and documents directly in the Windows Explorer.

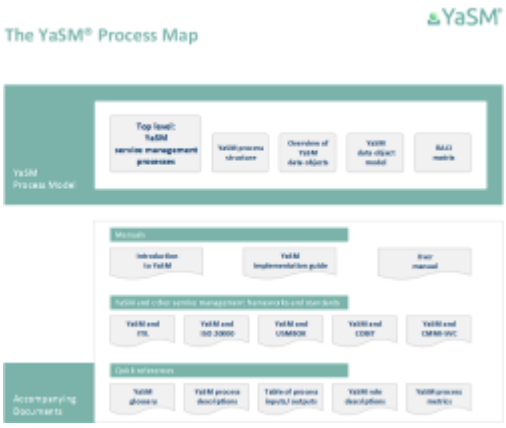
The most important navigation paths are illustrated below:

Components of the YaSM® Process Map

Visio diagrams

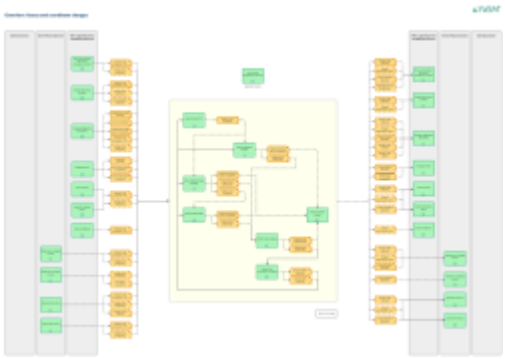
Front page

The front page is a portal with links to the various components of the YaSM® Process Map. It is the main entry point into the process model.



Process overviews

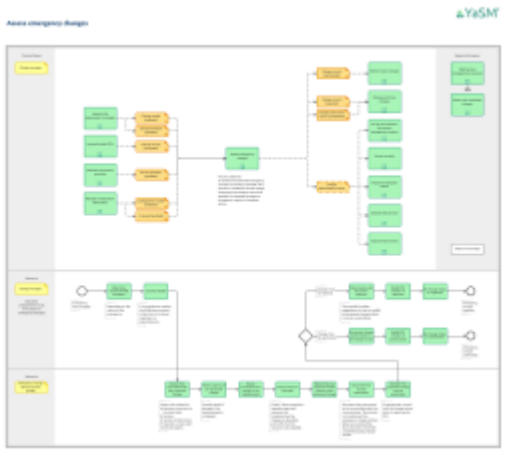
Overview diagrams show for each main process how it is related to the other main processes and what sub-processes it contains.



Flowchart diagrams

The top areas of the flowchart diagrams illustrate the process interfaces in detail.

Underneath the top area, the flowchart diagrams contain one or several rows (“swim lanes”) with a detailed account of the process activities.



Process structure diagram

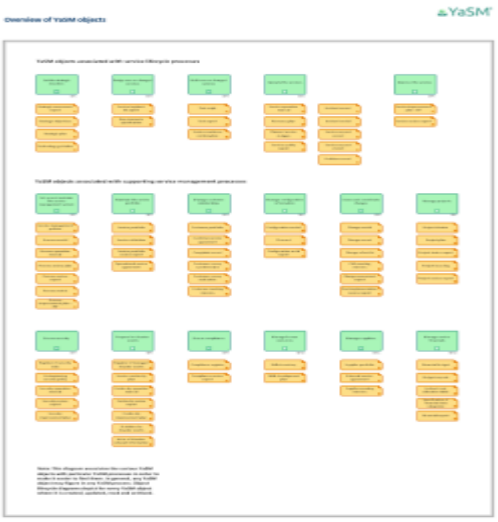
The process structure diagram provides a complete view of the YaSM process structure on a single page.

This diagram can be used for directly navigating to specific overview or flowchart diagrams on the main or sub-process levels.

Overview of YaSM data objects (“YaSM objects”)

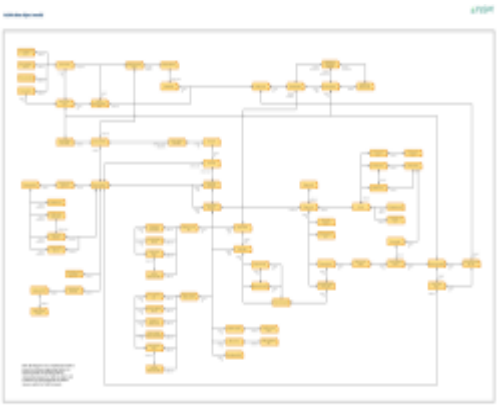
This diagram provides a list of all YaSM data objects (process inputs and outputs), sorted by the processes which are most closely associated with the objects.

Every YaSM data object has an associated checklist which describes the object in more detail, and an associated object lifecycle diagram. Both can be opened via hyperlinks.



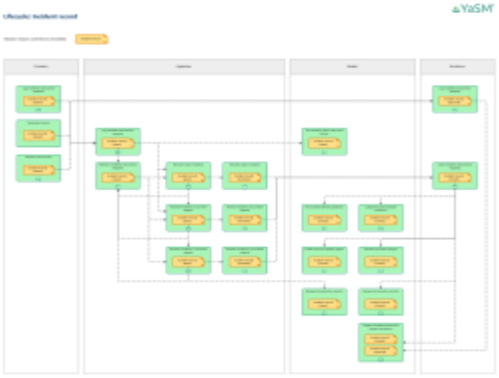
YaSM data object model

The YaSM data object model provides a complete overview of the key relationships between the YaSM data objects. Its purpose is to facilitate an understanding of each object's relevance within the YaSM framework.



Object lifecycle diagrams

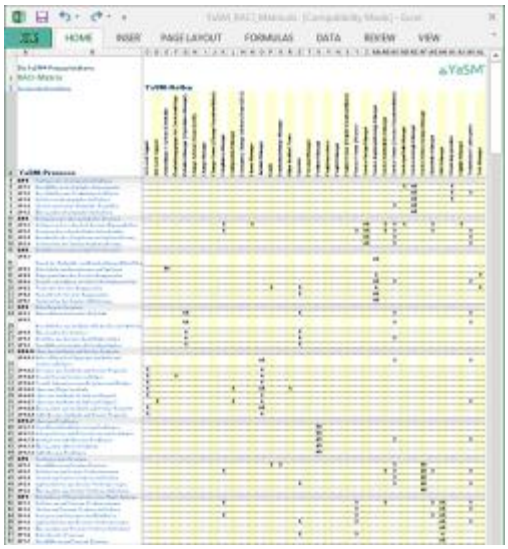
Object lifecycle diagrams are available for every YaSM data object. Their aim is to illustrate which YaSM processes create, update, read and archive particular YaSM objects, and how their status changes throughout their lifecycle.



RACI matrix

The RACI or responsibility matrix provides a summary of the YaSM roles' responsibilities in the various YaSM processes.

The RACI matrix is supplied in the form of an Excel table. The process names in the column on the left are configured with hyperlinks; this makes it possible to open the Visio diagram for a particular process directly from the matrix.

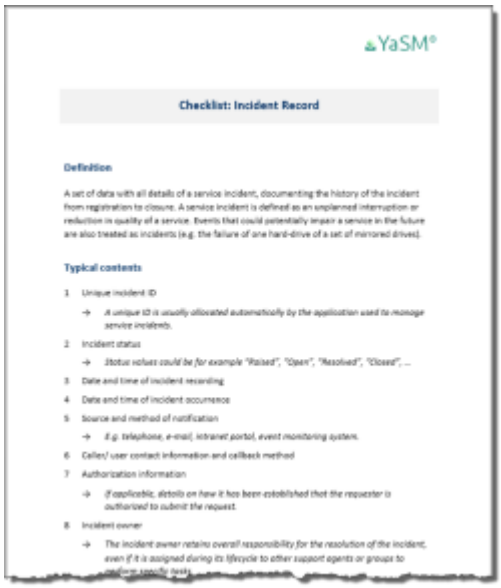


Checklists/ document templates

The checklists in Microsoft Word (*.DOC*) format explain the YaSM key terms in detail. Typically, a YaSM checklist exemplifies the structure of the data or information contained in a document or record.

Example: The checklist for the incident record explains what information is typically maintained for service incidents.

Checklists are available for every YaSM data object and are generic, i.e. applicable to most organizations.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Checklist: Incident Record

Definition

A set of data with all details of a service incident, documenting the history of the incident from registration to closure. A service incident is defined as an unplanned interruption or reduction in quality of a service. Events that could potentially impair a service in the future are also treated as incidents (e.g. the failure of one hard-drive of a set of mirrored drives).

Typical contents

1 Unique incident ID
→ *A unique ID is usually allocated automatically by the application used to manage service incidents.*
2 Incident status
→ *Status values could be for example "Raised", "Open", "Resolved", "Closed", ...*
3 Date and time of incident recording
4 Date and time of incident occurrence
5 Source and method of notification
→ *E.g. telephone, e-mail, intranet portal, event monitoring system.*
6 Caller/ user contact information and callback method
7 Authorization information
→ *If applicable, details on how it has been established that the requester is authorized to submit the request.*
8 Incident owner
→ *The incident owner retains overall responsibility for the resolution of the incident, even if it is assigned during its lifecycle to other support agents or groups to*

Many checklists can be used as templates during your YaSM initiative. For instance, the checklists for service agreements can serve as a starting point when you need to create such agreements for your organization.

Quick references

"Quick references" provide overviews of the different types of objects used in the process model in printer-friendly format:

YaSM process descriptions

This PDF quick reference provides a list of all YaSM processes defined in the YaSM process model, complete with brief descriptions of the process objectives.

YaSM glossary

The YaSM glossary in PDF format contains definitions or short descriptions of the YaSM key terms.

Many of those terms correspond to "YaSM data objects" in the YaSM® Process Map, which are used to describe the information flows between the YaSM processes. For each YaSM data object there is a checklist with more detailed information.

Process inputs/ outputs

This Excel workbook ("*process_inputs_outputs.xls"*) contains two tables, providing a complete list of inputs and outputs for each process. Filtering and sorting can be applied to create specific views, focusing on particular processes, inputs or outputs.

YaSM role descriptions

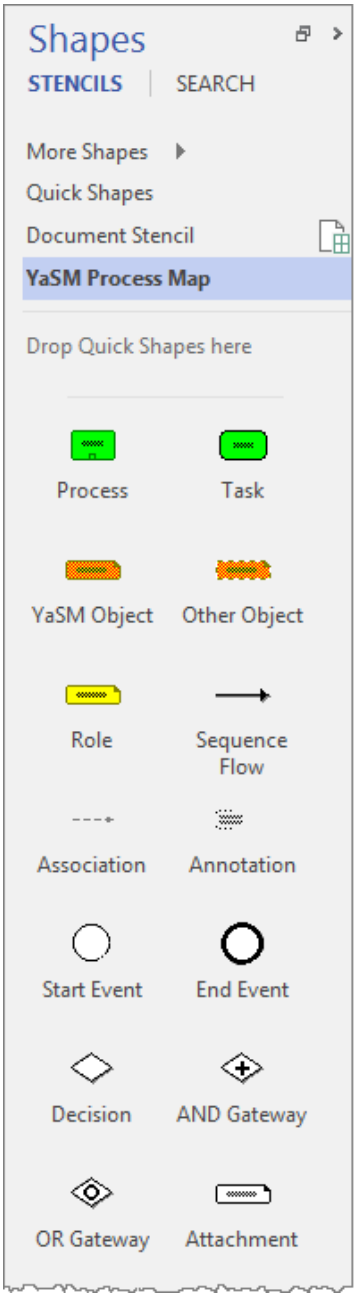
This PDF document contains short descriptions or definitions of all YaSM roles. Role objects are used in the flowchart diagrams and the RACI matrix to illustrate the responsibilities for whole processes or single process activities.

Process metrics

To support the selection of suitable process metrics, the YaSM® Process Map contains for each process a list of widely used metrics with brief definitions in PDF format.

Types of Shapes used in the Visio Diagrams

Master shapes and the document stencil



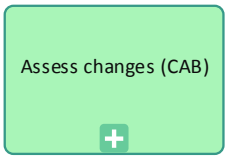
All shapes used in the YaSM® Process Map were created using the master shapes contained in a special YaSM Visio stencil, as shown on the right. The file "*YaSM_Process_Map.vss*" can be found in the "*Stencils*" folder of your delivery archive.

As always in Visio, once a master shape from a stencil is used in a Visio document, that master shape becomes part of the document stencil. The master shapes from the stencil are therefore also present in the document stencils of all individual Visio files which are part of the YaSM® Process Map.

Some of the master shapes are configured to work with the YaSM® Process Map's "repository feature". This is explained in more detail after page 26.

Note: You may insert any type of Visio shape into the process diagrams. However, we provide a set of master shapes to help you with maintaining a coherent design of the process model.

Processes



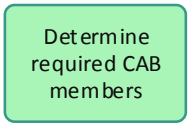
The BPMN process shape (BPMN: Business Process Modeling Notation) represents a whole YaSM process or sub-process. Process shapes are configured with six shape data fields[3]:

— *"Name"* (name of the process - this text is displayed on the shape)
— "*Note*" (process objective or description)
— "Reference" (reference tag or outline number of the process)
— "*AssignedTo*" (assignment to a superior process. - Resolution of incidents, for example, is assigned to Operate the services)
— "*UniqueID*" (unique identifier for the process. - The primary key for selecting processes from the Excel repository)
— "*Status*" (process status. - *"Active"* is the default value in this field; enter *"In planning"*, for example, to indicate that a process is not yet operational; any status value not equal to *"Active"* changes the shape's color to grey).

The plus sign at the bottom of the shape indicates the presence of a link, pointing to the corresponding process diagram (the plus sign is only shown if a hyperlink is set for the shape). To go to a linked diagram, click on the link in the shape's context menu or - in the more recent versions of Visio - click on the shape while holding down the control key.

The process shape is linked to the "*Process"* table in the Excel repository, which is used by the repository add-in to populate the shape data fields and to set the shape's link.

Tasks/ activities



BPMN task shapes are used to depict single activities within a process flow.

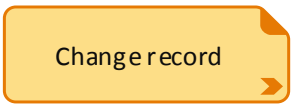
Because tasks typically figure only once in the process model, they are "simple" shapes: There are no defined shape data fields or links, and tasks are not managed through the Excel repository.

To modify a task, simply edit its text directly in the shape, as required.

[3] Shape data were referred to as "custom properties" in earlier versions of Visio.

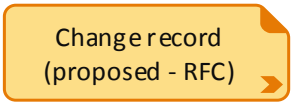
YaSM data objects ("YaSM objects")

YaSM data objects represent process inputs and outputs. Their main purpose is to illustrate the information flows between the YaSM processes.



Master object

For every YaSM data object, the YaSM® Process Map contains one "master object" and one or several variants which represent specific lifecycle stages of the object. The stage names are indicated in brackets after the object name.



Object variant representing a specific state of a YaSM data object

The purpose of using variants is easily understood when looking at the lifecycle diagram for a YaSM data object: The variants make it possible to show how an object's state changes as it is created, updated, read and archived by various YaSM processes.

YaSM data object shapes are configured with four shape data fields:

— "*Name*" (name of the object. - This text is displayed on the shape)

— "*Note*" (object description or definition)

— "*UniqueID*" (unique identifier of the object. - The primary key for selecting YaSM data objects from the Excel repository)

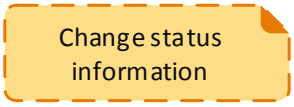
— "*Status*" (object status. - *"Active"* is the default value in this field; enter *"In planning"*, for example, to indicate that a YaSM object is not yet operational; any status value not equal to *"Active"* changes the shape's color to grey).

The *">"* symbol in the lower right-hand corner indicates the presence of hyperlinks (it is only shown if a hyperlink is set for the shape). Every YaSM data object features two links, one to the object's associated checklist and a second link to its lifecycle diagram. To go to a linked diagram or document, click on the link in the shape's context menu or - in the more recent versions of Visio - click on the shape while holding down the control key.

The YaSM data object shape is linked to the "*YaSMObject*" table in the Excel repository, which is used by the repository add-in to populate the shape data fields and to set the shape's links.

"Other data objects"

Just like YaSM data objects, "other data objects" (shown with a dashed line) represent information flowing from one process to another. But unlike the YaSM data objects, where YaSM has strong views about their content, such objects are mostly informal data or information. There are no associated lifecycle diagrams or checklists.



"Other data objects" are configured with four shape data fields:

— "*Name*" (name of the object. - This text is displayed on the shape)

— "*Note*" (object description or definition)

— "*UniqueID*" (unique identifier of the object. - The primary key for selecting objects from the Excel repository)

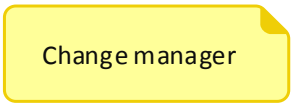
— "*Status*" (object status. - *"Active"* is the default value in this field; enter "*In planning"*, for example, to indicate that an object is not yet operational; any status value not equal to *"Active"* changes the shape's color to grey).

A *">"* symbol in the lower right-hand corner indicates the presence of a hyperlink (it is only shown if a hyperlink is set for the shape). To open a linked document, click on the link in the shape's context menu or - in the latest versions of Visio - click on the shape while holding down the control key. No links are set for this type of shape in the original state of the YaSM® Process Map.

The "other data object" shape is linked to the "*OtherObject"* table in the Excel repository, which is used by the repository add-in to populate the shape data fields and to set the shape's link.

Roles

Role objects are used to indicate who is accountable for a process or responsible for carrying out certain process activities.



Role objects are configured with four shape data fields:

— "*Name*" (name of the role. - This text is displayed on the shape)

— "*Note*" (role description or definition)

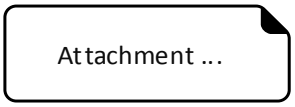
— "*UniqueID*" (unique identifier of the role. The primary key for selecting roles from the Excel repository)

— "*Status*" (role status. - *"Active"* is the default value in this field; enter *"In planning"*, for example, to indicate that a role is not yet operational; any status value not equal to *"Active"* changes the shape's color to grey)

A *">"* symbol in the lower right-hand corner indicates the presence of a hyperlink (it is only shown if a hyperlink is set for the shape). To open a linked document, click on the link in the shape's context menu or - in the latest versions of Visio - click on the shape while holding down the control key. No links are set for this type of shape in the original state of the YaSM® Process Map.

The role shape is linked to the "*Role"* table in the Excel repository, which is used by the repository add-in to populate the shape data fields and to set the shape's link.

Attachments



Attachment objects do not appear in the original versions of the process diagrams - they are meant to represent your organization's own documents. For example, attachment shapes may represent detailed working instructions for performing certain tasks; if placed next to tasks in the process diagrams and configured with your organization-specific links, it will be possible to open those working instructions directly from within the Visio diagrams.

Attachment objects are configured with four shape data fields:

— "*Name*" (name of the attachment. - This text is displayed on the shape)

— "*Note*" (attachment description or definition)

— "*UniqueID*" (unique identifier of the attachment. - The primary key for selecting attachments from the Excel repository)

— "*Status*" (attachment status. - *"Active"* is the default value in this field; enter *"In planning"*, for example, to indicate that an attachment is not yet operational; any status value not equal to *"Active"* changes the shape's color to grey).

A *">"* symbol in the lower right-hand corner indicates the presence of a hyperlink (it is only shown if a hyperlink is set for the shape). To open a linked document, click on the link in the shape's context menu or - in the latest versions of Visio - click on the shape while holding down the control key. No links are set for this type of shape in the original state of the YaSM® Process Map.

The attachment shape is linked to the "*Attachment"* table in the Excel repository, which is used by the repository add-in to populate the shape data fields and to set the shape's link (the "*Attachment*" table is empty in the original state of the YaSM® Process Map).

Start and end events

Start events and end events represent the start and end points of processes.

Start event

End event

Sequence flows

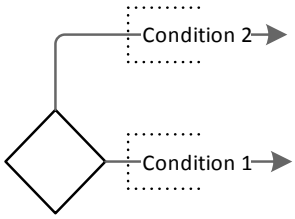
BPMN sequence flows are used to specify the sequence of activities.

Associations

BPMN associations link processes to other objects. Most importantly, associations are used to illustrate information flows and process interfaces.

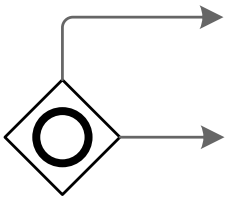
Decision gateways

A *decision* (exclusive) gateway routes the sequence flow to *exactly one* of the outgoing paths. Conditions determine the selection of the outgoing path. If no explicit conditions are given, the most appropriate outgoing path is selected.



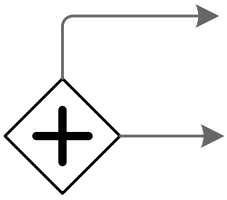
OR (inclusive) gateways

The *OR* (inclusive) gateway indicates a split in the process flow into two or more paths where *one or more* of the outgoing paths are taken. If no explicit conditions are given, all appropriate outgoing paths are selected.



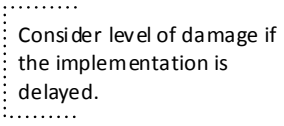
AND (parallel) gateways

The *AND* (parallel) gateway indicates a split in the process flow into two or more paths where *all* of the outgoing paths are taken.



Annotations

Annotations are used to enhance the process models with further information, e.g. when a process activity requires additional explanations.



Because annotations typically figure only once in the process model, they are “simple” shapes: There are no defined shape data fields or links, and annotations are not managed through the Excel repository. To modify an annotation, simply edit its text as required.

Navigation shapes

Navigation shapes are used in the process model to facilitate an easier navigation.

Modifying the Process Diagrams

All process diagrams may be changed without limitations - as with any Visio diagrams created by yourself, there are no restrictions.

The following recommendations, however, will help you make best use of Visio in combination with the YaSM® Process Map, and to maintain consistency and a coherent look of your YaSM process documentation.

Adding new shapes to existing diagrams

Create new shapes by either

— Copying an existing shape within a drawing using "*copy*" and "*paste*"

— Dragging a master shape from the document stencil onto the diagram.

Changing shape data

For all shapes which are configured for the repository feature (process, YaSM data object, "other data object", role and attachment shapes), we recommend not to change the contents of their shape data fields directly in Visio; rather, change the "*Name*", "*Notes*", "*AssignedTo*" and "*Reference*" attributes in the repository and perform a "*Refresh*" with the repository add-in on the affected shapes (this will help to ensure that all objects in the process model have the correct values in their attributes).

Modifying links

For all shapes which are configured for the repository feature (process, YaSM data object, "other data object", role and attachment shapes), we recommend not to change the link information directly in Visio; rather, change the link fields ("*HyperlinkDescriptor*n", "*HyperlinkAddress*n" and "*HyperlinkSubAddress*n") in the repository and perform a refresh with the repository add-in on the affected shapes.

Creating new process diagrams

There are two recommended procedures if new process diagrams need to be created:

— Create a new process diagram within an existing Visio file by creating a new drawing page, then giving the new page an appropriate name (most likely, the name of a new (sub-)process). Start inserting shapes by copying (groups of) shapes from other diagrams within your file, or by dragging master shapes from the document stencil onto the diagram.

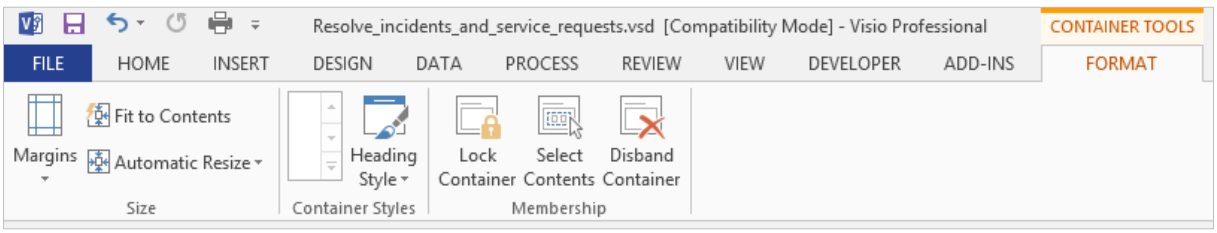
— Create a completely new Visio file by copying one of the YaSM® Process Map's existing files and renaming it. Delete and/ or rename the existing process diagrams as required. Then modify the process diagrams by copying (groups of) shapes from other diagrams, or by dragging master shapes from the document stencil or the YaSM stencil onto the diagram.

Container shapes

Starting with Visio 2010, Microsoft introduced the concept of "container shapes" - boxes around clusters of shapes to define logical groupings.

The YaSM® Process Map uses containers to help keep things organized: Swim lanes, for example, are containers, as well as the central boxes in the process overview diagrams.

As soon as you select a container or one or several shapes belonging to the container, the "*Container Tools"* tab is displayed in the Visio ribbon:



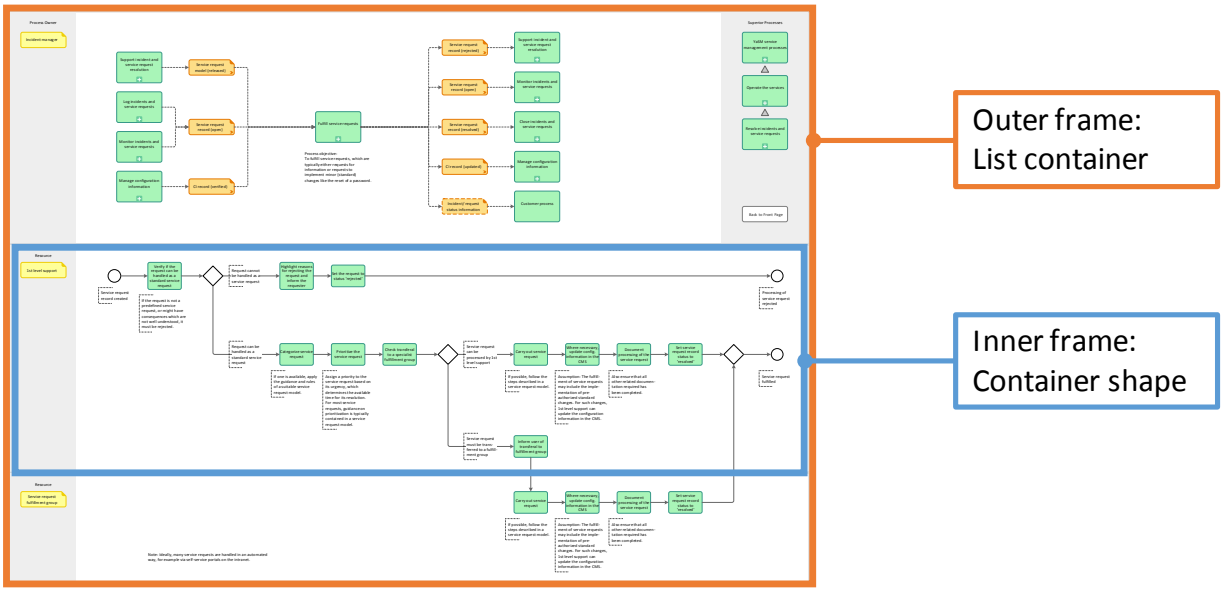
The shapes inside a container are not a group of shapes, so you have direct access to them. Shapes are added or removed simply by dragging them into or out of a container. When dragging a shape into

the container, the container outline will be highlighted to indicate that Visio will make the shape a member of the container.

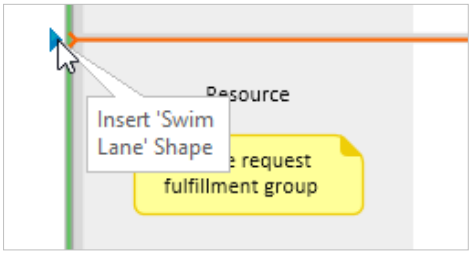
When you move a container, the contained shapes will move with it, keeping their positions inside the container. This makes it possible, for example, to easily move whole swim lanes with all contained activities.

Inserting or moving swim lanes

The flowchart diagrams on the sub-process level use a special kind of container shape (a “list container”) as an outer frame and container shapes as swim lanes, as in the example shown below. The list container will automatically make room for and align the swim lanes.



To insert new swim lanes into the diagram, simply click on the blue “insertion” arrow that appears when you position the mouse cursor over a corner of an existing swim lane.



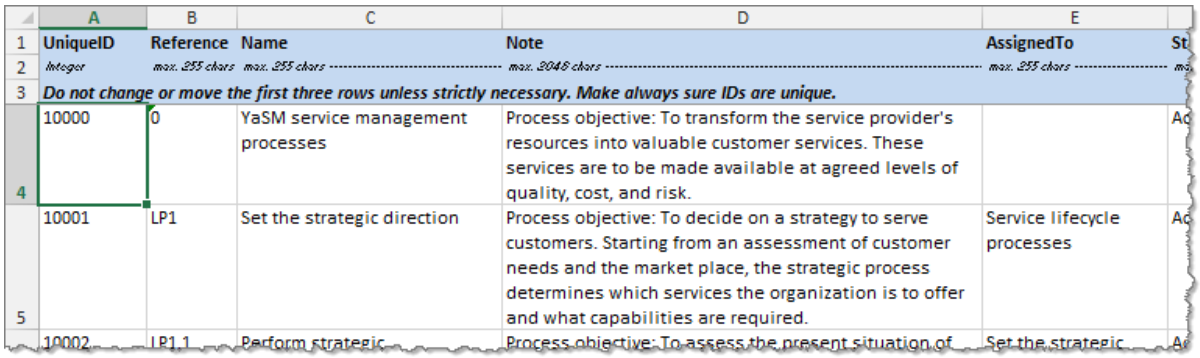
You can also drag whole swim lanes up or down within the outer frame, and you’ll notice that the lanes will be positioned automatically.

Note: Even though container shapes are a new feature introduced with Visio 2010, such shapes are still compatible with earlier versions of Visio. A shape configured as a container will behave like a normal rectangular shape in Visio 2003 and 2007: The contained shapes will not move with it (to move a swim lane in earlier versions of Visio, select the whole swim lane and all of its contents).

Using the Repository Add-In

Introduction

The Excel repository included in the YaSM® Process Map is a central place where to store and manage all descriptive information and link data for five object types used in the Visio diagrams: process, YaSM data object, "other data object", role and attachment shapes.



	A	B	C	D	E	
1	UniqueID	Reference	Name	Note	AssignedTo	St
2	*Integer*	*max. 255 chars*	*max. 255 chars*	*max. 2048 chars*	*max. 255 chars*	*ms*
3	*Do not change or move the first three rows unless strictly necessary. Make always sure IDs are unique.*					
4	10000	0	YaSM service management processes	Process objective: To transform the service provider's resources into valuable customer services. These services are to be made available at agreed levels of quality, cost, and risk.		Ac
5	10001	LP1	Set the strategic direction	Process objective: To decide on a strategy to serve customers. Starting from an assessment of customer needs and the market place, the strategic process determines which services the organization is to offer and what capabilities are required.	Service lifecycle processes	Ac
	10002	LP1.1	Perform strategic	Process objective: To assess the present situation of	Set the strategic	Ac

For example, the repository contains a worksheet or table named "*Process*", where you will find one row for each process defined in the YaSM® Process Map. Every row contains a number of cells which hold the process's unique ID, its name, objectives, assignment to a higher-level process, reference tag or outline number, and link information.

There are three more tables in the repository, for the YaSM data object, "other data object" and role shapes appearing in the process diagrams, plus one empty worksheet for attachment shapes where you can enter any documents specific to your organization (these documents can then be linked into the Visio process diagrams using attachment shapes from the Visio stencil supplied with the YaSM® Process Map).

The repository add-in allows you to pick records from the Excel repository from within Visio, and load the corresponding data into a shape's attributes. You can also refresh one or several selected shapes' attributes with a single mouse-click after data in the repository has changed.

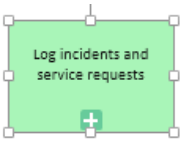
Add-in commands

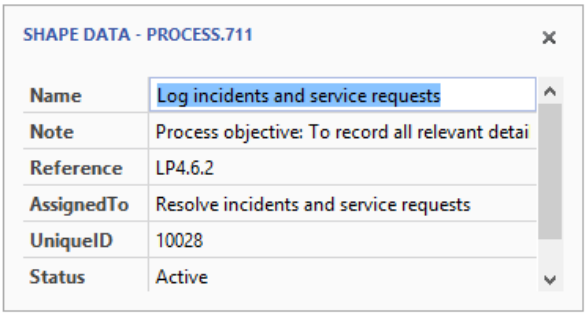
After installing the repository add-in, four new commands will appear in the *"ADD-INS"* tab in the Visio ribbon. These commands are explained below.

Note: The ribbon was introduced with Visio 2010. A custom toolbar will appear in Visio 2003 and 2007.

Refresh

If one or several process, YaSM data object, "other data object", role or attachment shapes are selected, this command updates ("refreshes") *the selected shapes'* attributes with current data from the repository.





After performing a refresh, the updated contents will be shown in the shape's shape data window.

It is possible to select more than one shape at a time and perform a refresh on all of these shapes. If graphical objects or other "ordinary" shapes not configured for the repository feature are selected, these will be skipped.

Refresh File

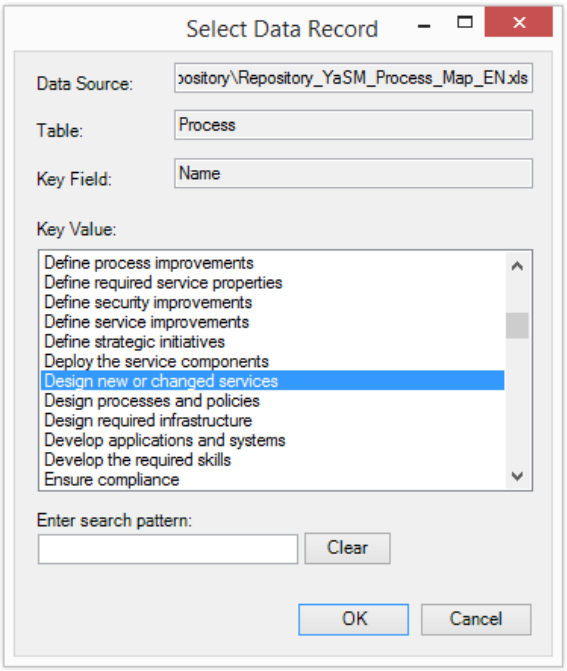
This command refreshes *all shapes in all process diagrams* within the currently active Visio file (or *all* currently open Visio files if the option "*Refresh File updates all open Files"* is enabled - see below). This is the fastest way of refreshing all shapes in one go after a bigger number of changes have been made in the repository.

Example: If "*Resolve_incidents_and_service_requests.vsd"* is the currently active Visio file, then clicking on "*Refresh File"* will refresh all process, YaSM data object, "other data object" and role shapes in all diagrams contained in "*Resolve_incidents_and_service_requests.vsd"*.

As the refresh proceeds, a message is displayed for every diagram being processed. Clicking on "*Cancel"* stops the refresh cycle. These intermediate messages can be suppressed by disabling the "*Show intermediate Messages during Refresh"* option (see below).

Select

Clicking on "*Select"* while a process, YaSM data object, "other data object" and role shape is selected brings up the list of entries from the repository - choose an item from the list and click "*OK"* to load the corresponding data from the repository into the shape's attributes.

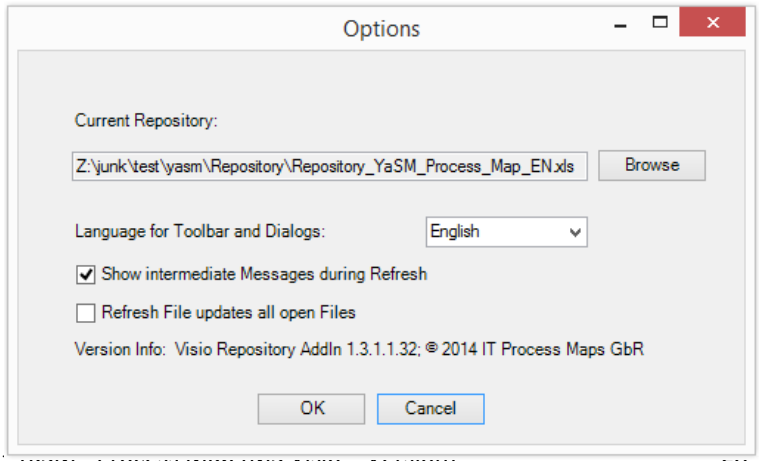


Example: Select a process shape and then click "*Select"* on the toolbar. This brings up the list of processes from the repository - choose any process from the list to load data from the repository into the shape's shape data fields and link attributes.

If you enter a search pattern, only those processes in the repository matching the pattern will be displayed (there is no distinction between upper and lower case letters, and no wildcard characters are recognized). Click on "*Clear"* to see the complete list of processes again.

Options

In the "*Options"* dialog you are able to specify the location of the repository file - click on "*Browse"* and choose the desired Excel file.



It is possible to maintain several Excel files as repositories, for example if you need

to maintain several repositories in different languages. In the "*Options"* dialog you can easily switch between repositories at any time.

In the "*Options"* dialog you can also switch between different languages for the add-in's toolbar and dialogs.

Finally, two settings control the behavior of the "*Refresh"* and "*Refresh File"* commands:

— If the option "*Show intermediate Messages during Refresh"* is set, intermediate messages will be shown before the update of individual diagrams; these messages make it possible to cancel the update at various points during the refresh cycle. Disabling this option means only one message will be shown at the end of the refresh cycle.

— If the option "*Refresh File updates all open Files"* is enabled, "*Refresh File"* will update *all files currently open* in Visio (otherwise, only the *currently active* file - i.e. the file that is currently visible in Visio - will be updated). This allows you to open several files from the YaSM® Process Map at the same time and perform an update operation on all of these files in one go.

Note: A refresh cycle across several files may take several minutes or longer to complete. Also, use this option with care as the add-in will try to update all files currently open in Visio, including any files which are not part of the YaSM® Process Map; this may lead to unpredictable behavior.

Simple changes to the repository

Changing existing cell contents and inserting rows are the simplest and the most likely modifications to occur - these changes are uncritical, as long as every row is identified with a unique ID in the "*Unique ID"* column.

Please observe:

— Do not change the format of the Excel file *("Microsoft Excel 97-2003" format* is required).

— Do not change the *first three rows* of the repository tables (highlighted in blue).

— *No empty rows* are permitted between rows containing data.

— Texts in the "*Note"* field may be up to 2048 characters long; text in all other fields may be up to 256 characters long.

— *Hard line breaks* within cells (inserted by *"ALT-Return"*) are not supported (such line breaks are not supported by some Visio versions and may show up as special characters in the shape data fields).
— *Double quotes* (") are not permitted within cells (the " character is used internally by Visio to delimit character strings); all text from the repository is stripped of double quotes when writing it to the shapes' shape data fields. Single quotes (') are allowed.
— Always ensure that every row within one worksheet is identified by a unique ID (every worksheet must have a first column labeled "*UniqueID"* containing integer numbers *["IDs"*]; IDs must be unique within one worksheet only, not within the entire Excel workbook; the IDs do not need to be continuous and do not have to appear in any particular order).
— To check if two identical IDs are present in a table's "*UniqueID"* column, sort the rows according to the "*UniqueID"* column, or use Excel's conditional formatting feature for highlighting duplicate values.
— Every worksheet must contain a *second column* labeled "*Name"* containing the objects' names.

Changing the unique IDs in the repository is possible but should be done with care. Generally speaking, the idea behind using unique IDs to identify objects is that they *never change*. We therefore recommend never to change the unique IDs but to use new ones if new objects (represented by single rows in the Excel worksheets) must be added to the repository.

After saving and closing the repository file, the modified contents are immediately available in Visio, so you can proceed with updating the process models using the "*Refresh"* command, or with inserting new objects using "*Select"*.

*Hint: When modifying the repository, it is generally a good idea to create a copy of an existing repository file, perform the changes and do some testing (you are always able to switch between different repository files with the "*Options" *command).*

Creating custom object types linked to the repository

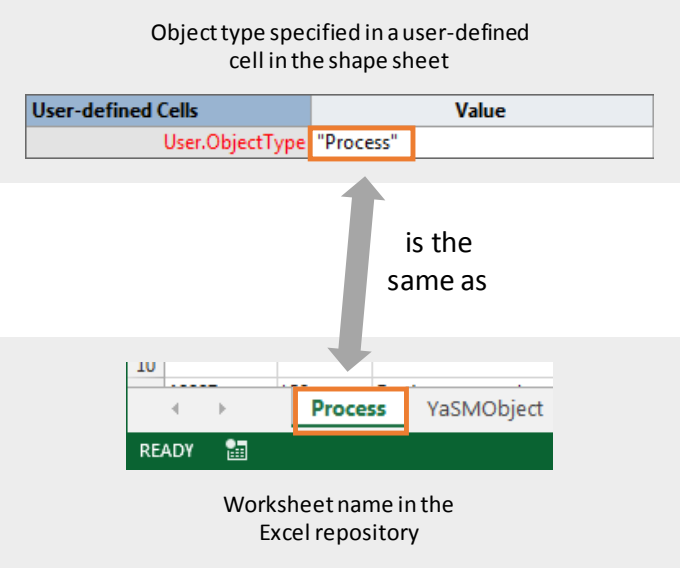
In its original state upon delivery, the YaSM® Process Map comes with five standard object types which are configured for use with the Excel repository: process, YaSM data object, “other data object” and role shapes.

In addition to these pre-defined object types you can create your own ones and use them in combination with the repository. For every custom object type, this involves creating a new master shape and inserting an additional worksheet or table into the Excel repository.

The most important aspect to understand when creating custom objects is that a shape’s object type and the name of the worksheet in the repository must be identical (see figure on the right):

— The object type of a Visio shape is determined by the value of a user-defined cell “*User.Object Type*” (this value can be inspected and modified in the shape’s shape sheet).

— The name of a worksheet in the repository is determined by the text shown on the worksheet’s tab (it can be changed by double-clicking on the tab).



The recommended way for creating custom object types involves copying and modifying existing master shapes and tables. The following example illustrates how a new object type, representing application systems in the process diagrams, can be created:

1. Create a new worksheet in the repository

— Copy an existing worksheet in the repository and rename it to *“ApplicationSystem”*.
Note: Older versions of Excel truncate text in cells after 256 characters when copying worksheets. If you get to see such a

warning, create a new worksheet instead of copying an existing one, name it "ApplicationSystem" *and copy the contents of an existing worksheet into it.*

— Delete the contents of all existing cells in the new table but leave the first three rows (highlighted in blue) intact, as they must be in place in exactly this format for the repository feature to function.

2. Create a new Visio master shape

— Open the stencil file "*YaSM_Process_Map.vss"*, to be found in the "*Stencils"* folder of your delivery archive (or create a copy of the original stencil for experimenting); make the stencil editable by right-clicking on its heading and selecting "*Edit Stencil"* from the context menu.

— Create a copy of an existing master shape using "*copy"* and "*paste"* (e.g., copy the "*Attachment"* master, then rename it to *"Application System"*).

— Open the new master shape for editing by double-clicking on it.

— Change the appearance of the master as appropriate (the original masters supplied with the YaSM® Process Map are actually groups of basic shapes, so be careful not to destroy the group but to modify the various elements of the group).

— Specify the new object type by opening up the master's shape sheet and changing the contents of the user-defined cell "*ObjectType"* to *"ApplicationSystem"* (be careful to open the group's shape sheet, not the shape sheet of one of the group's member shapes); then close the shape sheet.

— Open the master's shape data window and enter *"Application System …"* into the "*Name"* field (this will be the default text shown on the shape when creating a new "*ApplicationSystem"* object in a Visio diagram).

— Save the changes to the master by closing the window.

— Right-click on the new master, then select "*Edit Master - Master Properties …"* from the context menu; in the following dialog, tick the box next to "*Generate icon automatically from shape data"*; close the dialog - this will result in a new icon being created for the new master, which should look similar to the new master shape.

— Repeat the steps above, but this time uncheck "*Generate icon automatically from shape data"*, to prevent that icons are repeatedly re-created.

— Save the stencil file by clicking on the diskette icon in its title bar.

3. Start using the new master shape

— Enter some data into the "*ApplicationSystem*" table in the repository (e.g., enter names of application systems into the "*Name*" column, and their brief descriptions into the "*Note*" column); make sure every row in the worksheet starts with a unique integer in the "*UniqueID*" column; all other cells may be left blank, but obviously a repository item without a name would not be very useful.

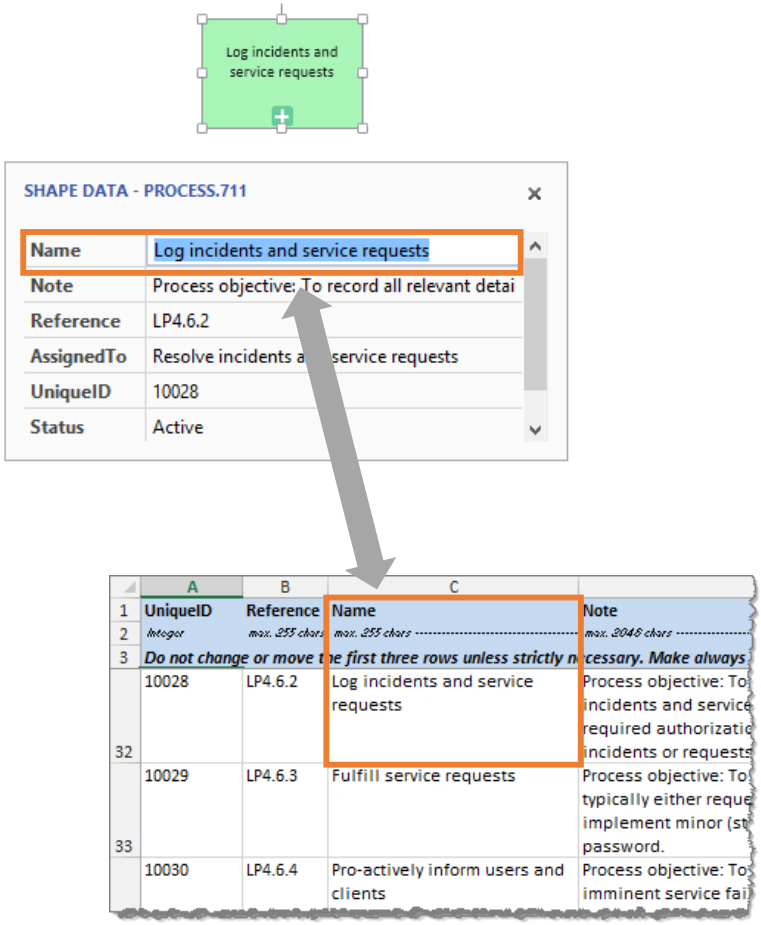
— Save and close the Excel repository.

— You can now add application system shapes to your Visio diagrams by dragging an "*ApplicationSystem*" master onto a Visio process diagram from the stencil, then clicking on "*Select*" in the "*Add-Ins*" tab on the ribbon - this brings up the list of application systems from the repository, and you are able to select the desired item.

— Check if all shape data fields and the link have been set correctly with data from the repository.

Adding data fields

In its initial state, the repository is configured to work with five types of shapes: process, YaSM data object, "other data object" and role shapes. For each of those types of shape there is a table in the repository and corresponding (master) shapes in Visio.



The columns in the repository correspond to certain attributes ("shape data fields") of the Visio shapes. For example, the "*Name*" column in the repository corresponds to a shape data field "*Name*" in Visio (see figure on the right).

For the repository add-in to work, the field names (i.e. the column headings) in the repository must adhere to certain rules, and the Visio shapes must be configured in a specific way:

— Field names in the Repository *without any prefix* correspond to a shape data field of the same name in Visio.
Example: The contents of the repository field (column) "*Reference*" are written to the shape data field "*Reference*".

— Field names in the Repository *with the prefix "User."* correspond to a user-defined cell, defined in the shape's shape sheet.
Example: The contents of the repository field "*User.ChangeDate*" are written to the user-defined cell named "*User.ChangeDate*".

*Hint: User-defined cells are normally invisible in Visio. They are accessible by opening a shape's shape sheet (if "*Show Shape Sheet*" is not available in the shapes' context menu, enable "*Run in developer mode*" in the advanced Visio options).*

— Field names in the repository *with the prefix "Hyperlink*n*."* correspond to a shape's hyperlink with index n.
Example: The contents of the repository field "*Hyperlink2. Address"* are written to the shape's *Address* attribute of its second hyperlink. "*Hyperlink2.SubAddress"* corresponds to the "*SubAddress"* field of the second hyperlink, and "*Hyperlink2. Descriptor"* to the "*Description"* field of the second hyperlink.

As an example, the "*Process"* worksheet in the repository contains in its original state nine columns (fields). The first six columns correspond to the following shape data fields:

— "*UniqueID*" (unique integer ID for the process)
— "*Reference*" (reference tag or outline number of the process)
— "*Name*" (name of the process)
— "*Note*" (process objectives or description)
— "*AssignedTo*" (used to indicate the assignment of a process to a superior process)
— "*Status*" (used to indicate, for example, if a process is active or in the planning stage)

The last three columns contain link information which is written into the shapes' first set of link attributes ("*Hyperlink1.Descriptor"*, "*Hyperlink1.Address"*, and "*Hyperlink1.SubAddress"*).

Using the information above, you can now start adding your own data fields. For example, add a column *"AssignedToBusinessUnit"* to the "*Process"* table in the repository, then add a shape data field named *"AssignedToBusinessUnit"* to the Process master shape in Visio. This allows you to manage an "*AssignedToBusinessUnit"* attribute for your processes through the repository.

Background information on the repository add-in

When loading data from the repository into a Visio shape, those data are stored in a number of cells within the shape's shape sheet.

Data records (rows) from the repository are selected using the "*UniqueID"* field (the "*UniqueID"* field is the primary key). This is why no duplicate unique IDs are allowed in the repository.

In its initial state after delivery, the Excel repository contains five tables or worksheets, one for each type of Visio shape which is configured for usage with the repository feature (process, YaSM data object, "other data object", role and attachment shapes).

On the Visio side, all process, YaSM data object, "other data object", role and attachment shapes contain a user-defined cell in their shape sheet called "*ObjectType"*. The content of the "*Object Type"* cell tells the repository add-in what type of shape is present and what worksheet (data table) in the repository holds the relevant data.

Example: If the shape's "*ObjectType"* cell contains the value *"Process"*, the repository feature knows that the shape at hand is a process shape; accordingly, when looking for data in the repository, the lookup will be performed in the "*Process"* worksheet.

The definition of valid object types is done implicitly by giving the repository worksheets appropriate names. The shapes' object types must correspond to the worksheet names. This mechanism can be used to create new types of shapes which use the repository feature, as explained above.

The columns in the repository table don't need to be in the same sequence as the shape data fields in Visio, as the shape data fields are addressed by their names.

However, every table in the Repository must have a first column labeled "*UniqueID"* and a second column labeled "*Name"*.

The text in row 2 of the repository tables *("max. 255 chars --------…")* is some arbitrary text which helps the Excel database driver to reserve sufficient memory while reading data from the repository. If you add new fields to the repository, please follow our example and enter some text containing the maximum number of characters for the new fields. This precaution is necessary because, unlike in a "real" database, there is no way in Excel to specify field lengths for the database driver.

Using the YaSM® Process Map with SharePoint

The YaSM® Process Map is often managed on a SharePoint[4] server, as this platform allows for the definition of access rights for specific parts of the process documentation. All employees can thus, for example, be granted read-only access to the process diagrams, while only a small team is allowed to make changes.

If the aim is to merely store and manage the files on a SharePoint server, no modifications are required, as in such a scenario locally installed applications (Visio or Visio Viewer) are used to modify or view the diagrams.

Since version 2010, however, SharePoint features the "Visio Services", including a "Visio Web Access Web Part" to present Visio drawings directly in a web browser. With the Web Part, locally installed applications are no longer necessary to view Visio diagrams (Visio is still required for editing purposes). The Visio Web Part is therefore a popular solution for publishing the process documentation within an organization.

Similar SharePoint Services and Web Parts are also available for Excel and Word.

The YaSM® Process Map needs to be adapted for use with the Web Parts, as the Web Parts do not support all features of the full Microsoft Office products or work in a different way. These adaptations (and the Web Parts' limitations) are described below.

Modifications to the Visio diagrams

Conversion from VSD to VSDX or VDW format

All Visio files must be converted once from the standard VSD format to either VSDX or VDW format, in order for them to be compatible with the Visio Web Part (VSDX is the new format for Visio files introduced with Visio 2013; VDW is the "Visio 2010 Web Drawing" file format). To this end, the Visio files of the YaSM® Process Map

[4] The information in this chapter relates to the more recent versions of SharePoint 2010 and 2013.

need to be saved in VSDX or VDW format. The original VSD files then become obsolete.

Note: The conversion and subsequent editing of Visio files in VDW format requires at least Visio 2010 Professional.

Modification of hyperlinks

The YaSM® Process Map uses hyperlinks to navigate from one diagram to another and to open linked documents. These links must be adapted to the SharePoint environment.

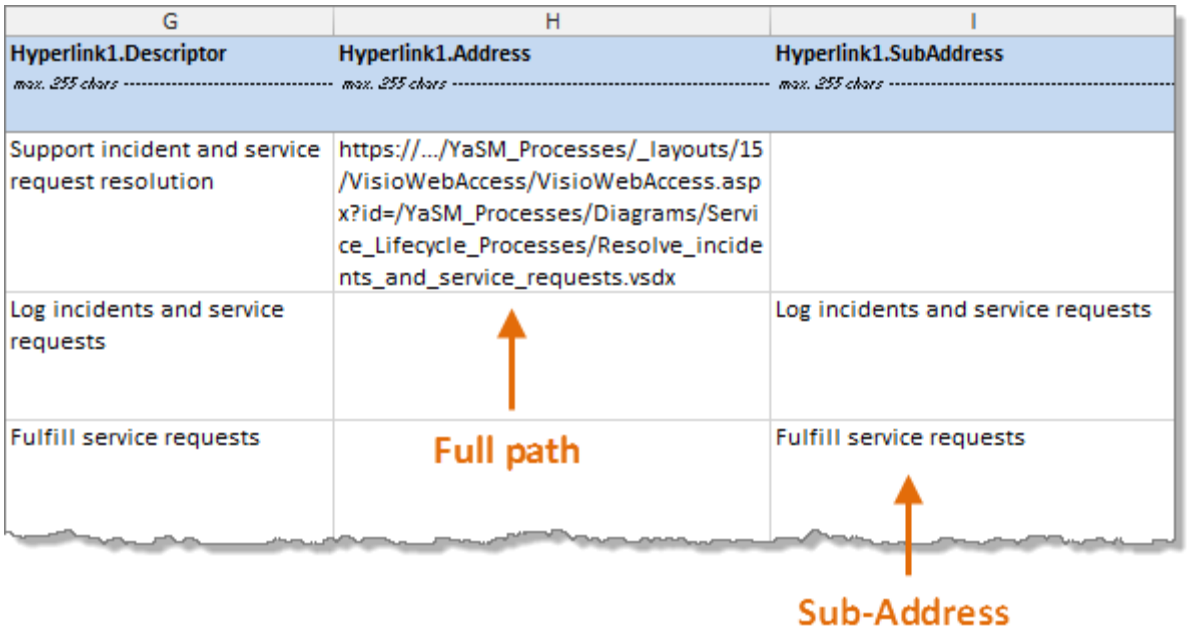
Adapting links with the repository add-in

We recommend using the Excel repository and the repository add-in to modify the links: Once the link information in the repository has been changed, the links in the Visio diagrams can be updated with the "*Refresh file*" command.

The following example highlights the required changes to the repository. The first figure below shows the original state of the repository:

G	H	I
Hyperlink1.Descriptor	**Hyperlink1.Address**	**Hyperlink1.SubAddress**
max. 255 chars	*max. 255 chars*	*max. 255 chars*
Support incident and service request resolution	..\Service_Lifecycle_Processes\Resolve_incidents_and_service_requests.vsd	Support incident and service request resolution
Log incidents and service requests	..\Service_Lifecycle_Processes\Resolve_incidents_and_service_requests.vsd	Log incidents and service requests
Fulfill service requests	..\Service_Lifecycle_Processes\Resolve_incidents_and_service_requests.vsd	Fulfill service requests

This link information must be changed as follows (the URL pointing to a SharePoint server location is only an example; it will look different in your environment):



It is important that the "*Address*" column contains the full paths to the VSDX or VDW files on the SharePoint server.

As for the "*SubAddress*" column,

— Links to overview diagrams (YaSM main processes) contain no sub-address.

— Links to flowchart diagrams (YaSM sub-processes) contain only the sub-address (the local name of the Visio diagram).

Links pointing to checklists need to be changed to work with the Word Web Part. Here is an example for a link which will open a checklist in the Web Part (the link will look different in your SharePoint environment):

https://…/YaSM_Processes/_layouts/15/WopiFrame.aspx?&sourcedoc=/YaSM_Processes/Checklists/CL_Incident_Record.doc

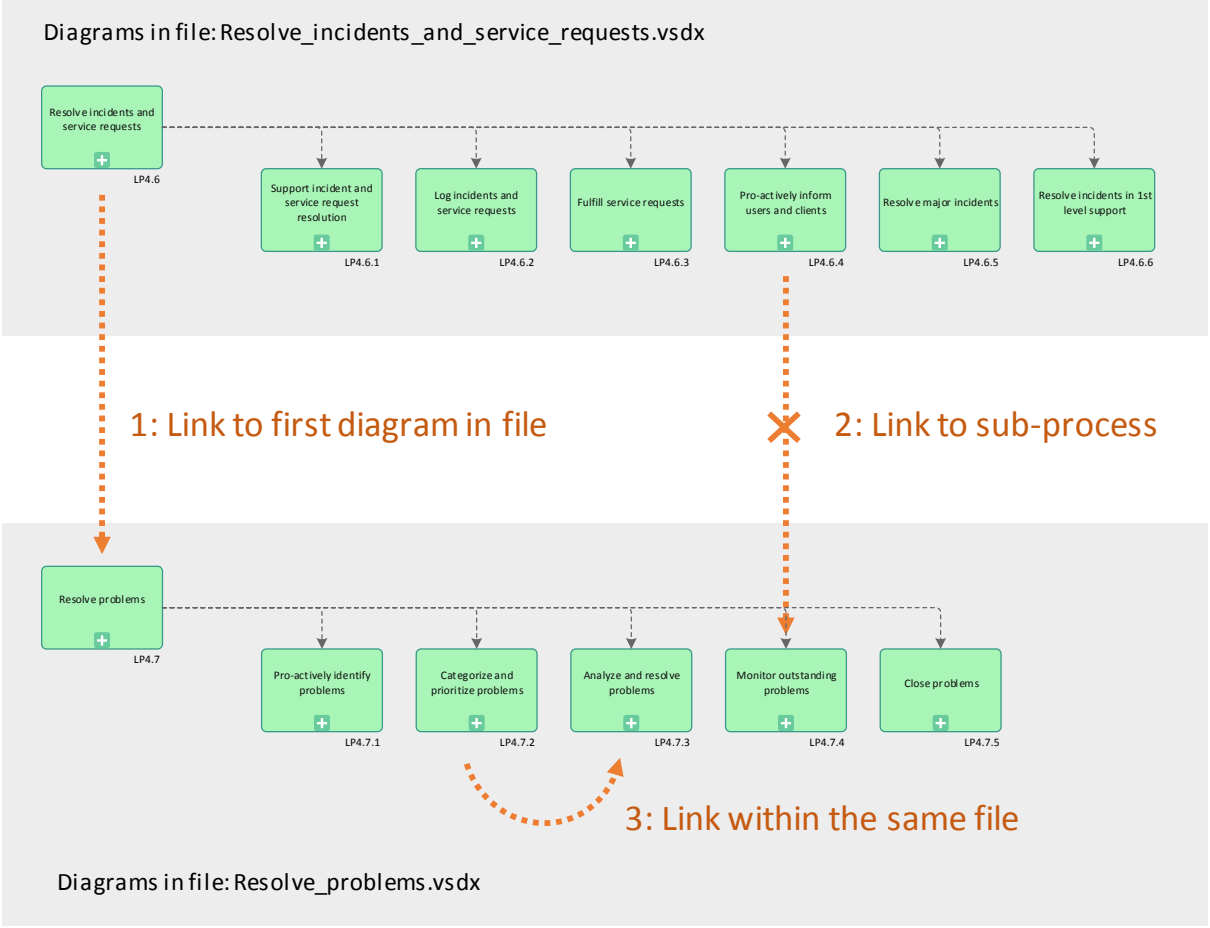
Limitations to using hyperlink sub-addresses in the Visio Web Part

In its original state, links in the YaSM® Process Map pointing to Visio files consist of two components: An *address* (specifying the Visio file to be opened) and a *sub-address* (specifying the diagram or page within the Visio file to be shown upon opening the file). This allows for direct hyperlinks to specific diagrams in a Visio file, such as a link to a particular incident resolution sub-process.

This works well with the full Visio application and the Visio Viewer, but there is no proper support for sub-addresses in the Visio Web Part: The Web Part will always open the first diagram of a Visio file, even if the link contains a sub-address. Local links (links between diagrams in the same Visio file) do not work.

Until these limitations are removed by a new version of the Visio Web Part, we recommend implementing a workaround by deleting either the sub-address or the address (as in the example above).

The following figure illustrates which types of links work with this setup:



— Links of type 1, pointing to the first diagram in a Visio file (for example, a link pointing to the overview diagram of the incident resolution process)

— Links of type 3, pointing from one Visio diagram to another one in the same file (for example, a link between two incident resolution sub-processes).

Links of type 2, pointing from outside to a specific diagram in a Visio file, are not possible (for example, a link from problem resolution to a specific sub-process in incident resolution). But this is only a minor drawback since such links exist only in a small number of places in the process model, for example in the process structure diagrams.

Full path names vs. relative links

In its original state, the YaSM® Process Map contains relative hyperlinks, so that Visio calculates the address of a linked file based on the current file location. Using relative links has the advantage that the links do not need to be modified when you move the whole process documentation to a different location on your hard drive or local network.

Unfortunately, relative links are not understood by the Visio Web Part and must be replaced by full paths pointing to the exact link targets on the SharePoint server. Every time the set of files is moved to a different location on the SharePoint server, the links must be adapted accordingly.

Modifications to the RACI matrix

As a first step, the matrix must be converted to XSLX format, since this format is required for use with the Excel Web Part.

Then the links in the first column of the matrix, pointing to process diagrams, need to be changed to full path names pointing to the VSDX or VDW files on the SharePoint server (those path names are the same ones as in the repository - see above).

Note: Please deactivate "Options - Advanced - Web Options - Update links on save" *in the Excel options, otherwise the links may be changed unintentionally when saving the matrix on the SharePoint server.*

Some Excel features used in the RACI matrix must be removed as they are not supported by the Excel Web Part (if the features are not removed, this may result in error messages being shown or the matrix not being displayed by the Web Part):

— Remove data validation (the drop-down lists in the matrix cells for the selection of *"R", "A", "C" or "I"*).

— Change the vertical text alignment of the role names to horizontal alignment (if required, adjust the column width).
— Delete all graphical objects.

Finally, the YaSM® Process Map contains a link from the Front Page diagram to the RACI matrix. This link must be changed as follows for the RACI matrix to open in the Excel Web Part (again, this link is only an example, it will look different in your environment):

https://…/YaSM_Processes/_layouts/15/WopiFrame.aspx?&sourcedoc=/YaSM_Processes/RACI_Matrix/RACI_Matrix.xlsx

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